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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/875,059	06/06/2001	Erskine R. Barbour	ABMS-0122/B010420	7848

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EXAMINER

TERESINSKI, JOHN

ART UNIT	PAPER NUMBER
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2858

DATE MAILED: 01/30/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/875,059

Applicant(s)

BARBOUR ET AL.

Examiner

John Teresinski

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on _____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) _____ is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-37 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 8, 12, 13, 16-19, 22-34, 36 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,729,119 to Barbour in view of U.S. Patent No. 5,452,172 to Lane et al..

Regarding claim 8, Barbour discloses a power supply (column 6 lines 19-22), a microprocessor (column 4 lines 67-68) and at least one actuator drive circuit connected to a power switching device adapted to provide a series of modulated current pulses to the magnetic actuator within the power switching device (column 11 lines 34-38). Barbour does not disclose high voltage power distribution or the magnetic actuator connected to the power line in a high voltage electrical distribution system. Lane et al. discloses a high voltage electrical distribution system (column 1 lines 45-47) including an actuator connected to the high voltage line (column 1 lines 63-67). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Barbour for high voltage use and connect the actuator to the high voltage line for the purpose of reducing system interruption to a minimum if a fault should occur in a high voltage distribution system (column 1 lines 8-13).

Regarding claims 12 and 13, Barbour discloses alternating and direct current power supplies (column 11 lines 5-7).

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Regarding claim 16, Barbour discloses a controller housing (column 4 line 10) and an energy storage capacitor for storing energy to a magnetic actuator (column 5 lines 5-10 and column 13 lines 29-35).

Regarding claims 17-19 and 22-23, Barbour discloses applying a series of current pulses for a predetermined period of time (column 14 lines 15-16), comparing the impedance value to a threshold/predetermined value and determining the position and condition of a coil based on comparison (column 14 lines 19-24).

Regarding claims 24-27, Barbour discloses applying voltage across a coil for a predetermined period of time (column 13 lines 62-67 and column 14 lines 1-12).

Regarding claims 28-31, Barbour discloses a transistor having a first, second and third terminals (column 7 line 45), an inductor disposed between input power supply and transistor and an output terminal in electrical connection with the third terminal of the transistor (see figure 1b), a regulator operating in linear mode (column 6 lines 19-22) with an inductor acting as an oscillator (column 11 lines 34-37), at least one diode coupled between the output terminal and the capacitor (see figure 1b) and diodes that rectify the output of the capacitor (column 7 lines 35-38).

Regarding claims 32 and 33, Barbour discloses a microprocessor having a pulse width modulator coupled between the second and third terminal of the transistor and pulsing of the second terminal of the transistor (column 10 lines 3-15).

Regarding claims 34, 36 and 37, Barbour discloses determining based on the regulated output signal, whether to operate regulator in switching or linear mode (column 12 lines 33-37),

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a regulated output signal at a voltage of 15 VDC (column 11 lines 5-17) and rectifying power signal prior to outputting the regulated output signal at the second voltage (column 9 lines 29-37).

Claims 1-7, 9-11, 14, 15, 20, 21 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Barbour and Lane et al. and further in view of U.S. Patent No. 6,147,422 to Delson et al..

Regarding claim 1, Barbour discloses a method for controlling a magnetic actuator within a power switching device (column 5 lines 35-40), a coil and armature (column 6 lines 64-65) and the method/means for inputting a power signal, applying a series of modulated current pulses through the coil of a magnetic actuator (column 11 lines 34-38). Barbour in view of Lane does not disclose applying modulated current pulses in a first direction such that the actuator moves from a first to a second position. Delson et al. discloses applying a modulated current pulses/modulated current signal in a first direction such that the actuator moves from a first to a second position (column 7 line 54, column 12 lines 65-67, column 13 lines 1-7). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include the application of modulated current supply pulses/modulated current signal in a first direction to move an actuator from a first position to a second position as taught by Delson et al. into Barbour and Lane et al. for the purpose of controlling an actuator within a power switching device.

Regarding claims 2 and 3, Barbour in view of Lane et al. does not disclose current pulses through the coil in a second direction for the actuator to move from a second to a third position or the third position being the first position. Delson et al. discloses applying modulated current pulses in a second direction to the coil of a magnetic actuator and a third position as a first

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position (column 10 lines 38-42). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include applying current to the coil in a second direction and the third position as the first position as taught by Delson et al. in to Barbour in view of Lane et al. for the purpose of moving the actuator in a reverse direction and returning the actuator to an original location.

Regarding claims 4 and 5, Barbour discloses measuring a current value in a coil while pulsing a coil (column 12 lines 1-6) and the continuation of current pulses to the coil of an actuator (column 10 lines 61-67) and comparing the current level with a threshold value (column 1 lines 50-52).

Regarding claims 6, 7, 9 and 10, Barbour discloses tuning the series of modulated current pulses (column 14 lines 36-51). Barbour in view of Lane et al. does not disclose changing the amplitude of the current pulse. Delson et al. discloses changing the amplitude of a current pulse and low, medium and high/multiple settings (column 10 lines 58-61). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include the amplitude adjustment as taught by Delson et al. into Barbour in view of Lane et al. for the purpose of supplying proper current to the coil.

Regarding claim 11 Barbour discloses recloser/reset function (column 13 lines 53-57).

Regarding claim 14, Barbour in view of Lane et al. does not disclose three actuator control circuits. Delson et al. discloses the use of three actuator control circuits (column 9 lines 55-64). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include the a three actuator control circuits as taught by Delson et al. into Barbour in view of Lane et al. for the purpose of controlling three actuators.

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Regarding claims 15 and 35, Barbour discloses a programmable power supply with a range of 12 to 200 VDC (column 11 lines 5-7). Barbour in view of Lane et al. does not include the range of 200-250 VDC. It would have been obvious to one of ordinary skill in the art at the time the invention was made to increase the power supply range for the purpose of providing more power.

Regarding claims 20 and 21, Barbour discloses a predetermined interval time of seven milliseconds and performing four measurements during time interval (column 14 lines 14-22). Barbour in view of Lane et al. does not disclose a measurement time of about 230 microseconds. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include a measurement time of about 230 microseconds as disclosed by Barbour for the purpose of increasing the functionality of the device.

Response to Arguments

Applicant's arguments filed 18 November 2002 have been fully considered but they are not persuasive.

In response to applicant's argument that Barbour does not disclose connection of the magnetic actuator to the power line in a high voltage electrical distribution system, applicant is referred to claim 8 above.

In response to applicant's argument that it would change the principle operation of the Barbour device by combining it with Delson et al., the examiner disagrees. Applicant is referred to Barbour (column 5 lines 60-65), which teaches monitoring the impedance of a trip coil in

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order to determine the position of a solenoid actuator arm. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include the actuator and means of controlling the actuator as disclosed by Delson et al. into Barbour for the purpose of providing high fidelity motion of the actuator arm (column 6 lines 36-41).

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Teresinski whose telephone number is (703) 305-4746. The examiner can normally be reached on M-F 8:30 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, N. Le can be reached on (703) 308-0750. The fax phone numbers for the

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organization where this application or proceeding is assigned are (703) 872 9319 for regular communications and (703) 872 9318 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

JT

JT

January 22, 2003



N. Le

**Supervisory Patent Examiner
Technology Center 2800**